LEDs to challenge conventional lighting

Thanks to further improvements in its proprietary thin-film technology, Osram Opto Semiconductors Inc says its Power TOPLED products will be able to enter markets previously reserved for conventional light sources, such as information and advertising display industries. The benefit comes from higher brightness levels. Since fewer light sources are needed, this reduces lighting system energy and cost.

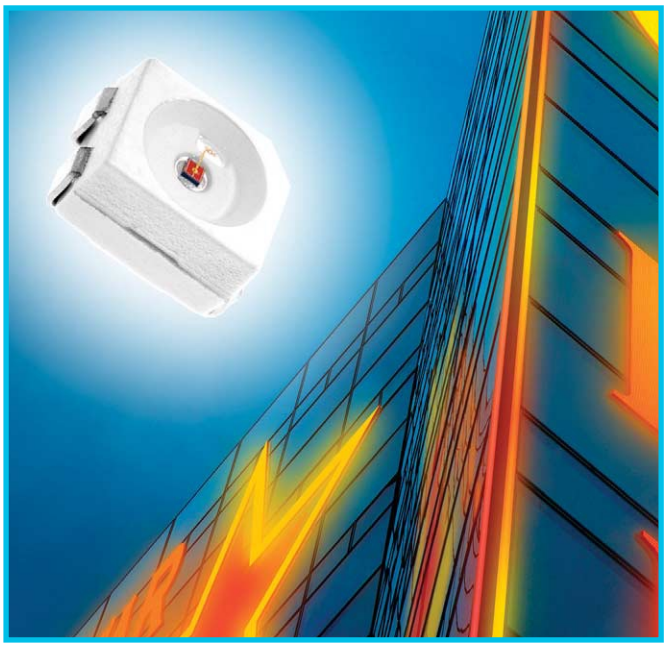
All generated light is emited through the top of the chip, resulting in higher luminous efficacy and producing red InGaAlP LEDs that are bright enough for a wide range of applications. These high-brightness LEDs are ideal for rear light clusters and indicators on vehicles and for display panels for traffic control systems.

"Our thin-film technology in high-volume, SMT Power TOPLED packages enables lower profile, low-cost solutions to be realized with considerable improvement in light output at elevated temperatures," said Ellen Sizemore, director, LED Products Group.

Power TOPLED products now offer 150% more efficiency and produce a wide variety of red and yellow tones.

The advances in the luminous efficacy and colour palette of its Power TOPLED line of LEDs target automotive, signal and signage applications. In addition to amber (617nm), the Power TOPLED product portfolio now includes yellow (590nm), orange (606nm), red (625nm) and super-red (633nm) versions. In future the new thin-film technology will be applied to its other LED product families as well, including Advanced Power TOPLED, SIDELED, Golden DRAGON and miniaturized PointLED, with launches scheduled for 2006.

* Osram GmbH has licensed white LED technology developed by its Osram Opto Semiconductors subsidiary to Lednium of Melbourne, Australia (a subsidiary of Avatar Industries Ltd) for use in its Lednium series of LED lamp roducts. These include three-dimensional multi-chip geodesic dome-shaped LED lamps.



Uncooled coaxial lasers for CATV

ExceLight Communications' new family of uncooled coaxial lasers for CATV applications enable more cost-effective forward-path applications. They offer output powers up to 5 mW at 1310 nm, which is 2-3 dB higher than previous generations of uncooled coaxial lasers.

The lasers benefit from improved quantum efficiencies in the DFB laser diode and an improved optical coupling system, allowing users to obtain higher power over a wider operating temperature range, all without cooling. This optimised, uncooled coaxial laser design can provide a significant cost advantage over commonly used butterfly packaged lasers.

"Lowering the costs of optical CATV distribution is important to both service providers and transmission equipment suppliers," comments president Mike Nishiguchi. "It gives equipment designers an important alternative to higher-cost butterfly devices."

The SLV4840/SLV4850 and SLV4240/SLV4250 coaxial lasers offer significantly improved linearity over conventional lasers to achieve much higher output levels at high temperatures. According to the company, this enhanced linearity means that there is no 'roll-off' of optical output power at elevated temperatures, while also enabling improved distortion performance.

The lasers are designed and manufactured by ExceLight's parent company Sumitomo Electric Industries, a global provider of CATV return-path, DFB, and CWDM lasers.

KoBrite LED chip making joint venture ready for mass production

Kopin Corp of Taunton, MA, USA, which makes heterojunction bipolar transistor epiwafers, has officially opened the new campus of its China-based joint venture KoBrite Corp, which will mass produce GaN-based blue-spectrum light-emitting diode chips. This comes just nine months after the joint venture was agreed, in February 2005.

Joint venture partners include Kopin Taiwan Corp (of which Kopin Corp holds a 40% stake), Bright LED Electronics Corp of Taipei, Taiwan, and venture capital firm WK Technology Fund. KoBrite's chairman and chief executive officer is Bright LED Corp's president Sandy Liaw.

Located about an hour's drive from Hong Kong in Dongguan, China, the three-building KoBrite campus consists of a manufacturing plant with a 20,000 ft² cleanroom, an office building, and a dormitory.

"The low cost structure of manufacturing in China, the proximity to huge and rapidly expanding markets, local management expertise, and state-of-the-art technology should bode very well for the future of KoBrite," said Kopin's president and chief executive officer Dr John C. C. Fan.